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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Applicant(s): A.D. Baker et al.

Case: 21-4

Serial No.: 09/503,042

Filing Date: February 11, 2000

Group: 2667

Examiner: Anh-Vu H. Ly

I hereby certify that this paper is being deposited on this date with the U.S. Postal Service as first class mail addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Signature: Joseph B. Ryan Date: April 12, 2005

Title: Automated Link Variant Determination and Protocol Configuration
for Customer Premises Equipment and Other Network Devices

TRANSMITTAL OF SUPPLEMENTAL APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith are the following documents relating to the above-identified patent application:

- (1) Response to Office Action; and
- (2) Supplemental Appeal Brief.

There is no additional fee due in conjunction with the response. In the event of non-payment or improper payment of a required fee, the Commissioner is authorized to charge or to credit **Avaya Inc. Deposit Account No. 50-1602** as required to correct the error.

Respectfully submitted,

Date: April 12, 2005

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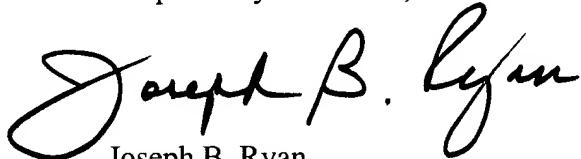
RESPONSE TO OFFICE ACTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated January 12, 2005 in the above-referenced application, Applicants hereby request reinstatement of the appeal pursuant to 37 C.F.R. §1.193(b)(2). A Supplemental Appeal Brief is submitted concurrently herewith.

Respectfully submitted,



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Signature: A. Baker Date: April 12, 2005

Title: Automated Link Variant Determination and Protocol Configuration for Customer Premises Equipment and Other Network Devices

SUPPLEMENTAL APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Supplemental Appeal Brief is submitted in response to the Office Action dated January 12, 2005 in the above-referenced application, in which the Examiner reopened prosecution in response to the Appeal Brief filed September 27, 2004.

Applicants have submitted concurrently herewith a response to the Office Action, requesting reinstatement of the appeal.

REAL PARTY IN INTEREST

The present application is currently assigned to Avaya Inc. or a subsidiary thereof. Avaya Inc. is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no known related appeals or interferences.

STATUS OF CLAIMS

The present application was filed on February 11, 2000 with claims 1-27. Claims 1-27 are currently pending in the application.

Claims 1, 3, 4, 7-10, 14, 16, 17, 20-23 and 27 stand finally rejected under 35 U.S.C. §102(e), and claims 2, 5, 6, 15, 18 and 19 stand finally rejected under 35 U.S.C. §103(a). Claims 11-13 and 24-26 are allowed. Claims 1-10, 14-23 and 27 are appealed.

STATUS OF AMENDMENTS

There have been no amendments filed subsequent to the final rejection.

SUMMARY OF INVENTION

The present invention is directed to arrangements for configuring a device coupled to a communications network which includes a local network and one or more additional networks coupled to the local network. The invention involves automatically determining a link type associated with a communication link between a first device and at least one additional device coupled to the communications network, where the communication link is external to the local network and comprises a communication link of the one or more additional networks, by transmitting one or more messages from the first device and examining a corresponding response received by the first device over the communication link. At least one of the first and additional devices are then configured in accordance with the determined link type. The invention further requires that the first device comprises a gateway coupled between the local network and the one or more additional networks, and that the operation of automatically determining a link type is implemented at least in part within the gateway.

In an illustrative embodiment, shown in FIG. 1 of the drawings, a local network 102 is coupled to additional networks 114 and 116 via a gateway 110. The gateway 110 in the illustrative embodiment may include an autosensor 215 which implements an automated variant determination process. FIG. 3 shows a state diagram of an example automated variant determination process in which there are six different virtual circuit (VC) link variants, designated Case 1 through Case 6. Associated with each of the states 306, 310, 320, 330, 340, 350 and 360 in the FIG. 3 state diagram

is a particular test. The tests generally involve sending one or more designated messages, and examining subsequent received datagrams, so as to determine which of the six different VC link variants is being utilized by a given VC. Based on the result of the automated variant determination, a corresponding one of a plurality of logical access interfaces 220 is activated or otherwise selected for use. See the specification at, for example, page 7, lines 7-21, and page 8, lines 7-14.

ISSUES PRESENTED FOR REVIEW

1. Whether claims 1, 3, 4, 7-10, 14, 16, 17, 20-23 and 27 are anticipated under 35 U.S.C. §102(e) by U.S. Patent No. 6,108,350 to Araujo et al. (hereinafter “Araujo”).
2. Whether claims 2, 5, 6, 15, 18 and 19 are unpatentable under 35 U.S.C. §103(a) over Araujo in view of U.S. Patent Application Publication No. 2003/0067884 (hereinafter “Abler”).

GROUPING OF CLAIMS

With regard to Issue 1, claims 1, 4, 7-10, 14, 17, 20-23 and 27 stand or fall together, and claims 3 and 16 stand or fall together.

With regard to Issue 2, claims 2 and 15 stand or fall together, and claims 5, 6, 18 and 19 stand or fall together.

ARGUMENT

Issue 1

The Manual of Patent Examining Procedure (MPEP), Eight Edition, August 2001, §2131, specifies that a given claim is anticipated “only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference,” citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, MPEP §2131 indicates that the cited reference must show the “identical invention . . . in as complete detail as is contained in the . . . claim,” citing Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). For the reasons identified below, Applicant submits that the Examiner has failed to establish anticipation of claims 1, 3, 4, 7-10, 14, 16, 17, 20-23 and 27 by the Araujo reference.

Independent claim 1 is directed to a method for use in configuring a device coupled to a communications network. The method includes the steps of automatically determining a link type associated with a communication link between a first device and at least one additional device coupled to the communications network by transmitting one or more messages from the first device and examining a corresponding response received by the first device over the communication link, and configuring at least one of the first and additional devices in accordance with the determined link type.

In an amendment filed February 3, 2004, Applicants amended independent claim 1 to clarify that the communications network comprises a local network and one or more additional networks coupled to the local network, and that the communication link for which the link type is automatically determined is external to the local network, and part of the one or more additional networks. Further, claim 1 as amended indicates that the first device comprises a gateway coupled between the local network and the one or more additional networks, and that the automatic determination of link type is implemented at least in part within the gateway.

The Examiner in formulating the §102(e) rejection argues, with reference to FIG. 1A of Araujo, that the automatic stack determination module 136 of the central office 130 corresponds to the claimed first device, and that the customer premises equipment (CPE) 110 corresponds to the claimed additional device. The Examiner has argued that the claimed local network is “the network including the CPE 110 and the central office 130,” and that the claimed one or more additional networks comprise PSTN 134 and ATM network 137. See the April 23, 2004 Office Action at page 2, last paragraph, through page 3, first full paragraph, and the January 12, 2005 Office Action at page 2, last paragraph. However, if one were to assume for purposes of argument that this correspondence asserted by the Examiner is correct, then Araujo clearly fails to meet other limitations of claim 1. More specifically, as indicated above, the communication link for which the link type is automatically determined in the claimed arrangement is explicitly recited as being external to the local network, and part of the one or more additional networks. The Examiner relies on the teachings at column 7, lines 5-12, of Araujo, which provides as follows:

According to another aspect of the invention, automatic stack determination module 136 sends a transmission to customer premises equipment 110. By observing the response to the transmission and determining in which protocol the response is formatted, the automatic stack determination module 136 detects the protocol used by customer premises equipment 110. Additionally, if no valid response is received to a transmission in a particular protocol, the automatic stack determination module 136 may determine that the particular protocol is not being used by customer premises equipment 110.

The link involved in the relied-upon passage above is part of what the Examiner has defined as being the local network in Araujo. As mentioned previously, the Examiner argues that the claimed local network is the network including the CPE 110 and the central office 130, and that the claimed one or more additional networks comprise PSTN 134 and ATM network 137. Thus, the link between the automatic stack determination module 136 and the CPE 110 is clearly part of the local network identified by the Examiner, and not external to the local network as required by the explicit language of the claim. The limitations of claim 1 are thus not met by the Araujo reference.

In the January 12, 2005 Office Action, the Examiner further argues that the claimed local network may be a network including the central office 130 and ATM network 137, and the claimed external network may be a network including central office 130 and CPE 110. However, this interpretation fails to give appropriate patentable weight to the terms “local” and “external” as used in the claim. A local network in this context will generally be understood by those skilled in the art to be a network associated with a CPE side of a given system, while the external network is separated from the local network by a gateway. This is consistent with the description provided in the specification at, for example, page 4, lines 9-24, page 5, lines 18-28, and page 21, lines 1-6. For the Examiner to suggest that the CPE side of the FIG. 1A system of Araujo is an external network while the ATM network 137 is a local network ignores the commonly understood meanings of “local” and “external,” and is inconsistent with the use of the terms in both typical conventional practice and in the present specification.

It should also be noted that the Araujo reference uses the term “local” in a manner which is contrary to the interpretation proffered by the Examiner. For example, at column 1, lines 14-17, the Araujo reference provides as follows:

Telephone subscribers are using the local loop for data communication in addition to voice. The local loop connects a telephone subscriber’s customer premises equipment to the central office equipment at the network service provider. At the central office, the connection is routed to its destination, either directly or through other equipment in the network.

Accordingly, it is believed that the system shown in FIG. 1A of Araujo fails to meet the claim limitations, and fails to provide the associated advantages in terms of facilitating CPE configuration processes.

Since Araujo fails to teach or suggest each and every limitation of claim 1 in as complete detail as is contained in the claim, as required by the above-cited MPEP §2131, claim 1 is not anticipated by Araujo.

Independent claims 14 and 27 each include limitations similar to those of claim 1 as described above, and are therefore believed allowable for substantially the same reasons that claim 1 is believed allowable.

Dependent claims 3, 4, 7-10, 16, 17 and 20-23 are believed allowable for at least the reasons identified above with regard to their respective independent claims.

Moreover, one or more of these dependent claims are believed to define additional separately-patentable subject matter relative to Araujo and the other art of record, as indicated below.

With regard to claims 3 and 16, these claims further recite that the claimed first device comprises a network server. The Examiner argues that the automatic stack determination module 136 of Araujo “is considered as a computer server.” Applicants respectfully disagree. Araujo discloses that automatic stack determination module 136 is an element of an access multiplexer 135 of central office 130. It does not operate as or otherwise comprise a network server as claimed. Claims 3 and 16 are therefore not anticipated by Araujo.

Issue 2

Dependent claims 2, 5, 6, 15, 18 and 19 are believed allowable for at least the reasons identified above with regard to their respective independent claims. The Abler reference cited by the Examiner fails to overcome the fundamental deficiencies of Araujo as applied to the independent claims. Also, it is believed that the Examiner has provided nothing more than a subjective, conclusory statement of motivation to combine Araujo and Abler. The Federal Circuit recently stated that this lack of objective evidence of motivation to combine renders an obviousness rejection improper. See, for example, In re Sang-Su Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002).

With regard to claims 2 and 15, these claims specify that the first device comprises customer premises equipment. As indicated above, the Examiner in conjunction with the §102(e) rejection argues that the automatic stack determination module 136 of the central office 130 in Araujo corresponds to the claimed first device, and that the CPE 110 of Araujo corresponds to the claimed additional device. Now, the Examiner argues that it would be obvious for one of the workstations 205 of Abler to correspond to the claimed first device. Applicants respectfully submit that this ignores the fact that none of the workstations 205 of Abler comprises a gateway coupled between a local network and one or more additional networks, as would be required by the claim. In addition, no motivation has been identified for replacing the automatic stack determination module 136 of the central office 130 in Araujo, which the Examiner had previously identified as corresponding to the claimed first device, with one of the workstations 205 of Abler. To the contrary, such a combination, alleged without substantiation to be obvious by the Examiner, appears likely to result in an unworkable implementation.

In view of the foregoing, Applicants believe that claims 1-10, 14-23 and 27 are in condition for allowance, and respectfully request the withdrawal of the §102(e) and §103(a) rejections.

Respectfully submitted,



Date: April 12, 2005

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APPENDIX

1. A method for use in configuring a device coupled to a communications network, the communications network comprising a local network and one or more additional networks coupled to the local network, the method comprising the steps of:

automatically determining a link type associated with a communication link between a first device and at least one additional device coupled to the communications network, the communication link being external to the local network and comprising a communication link of the one or more additional networks, by transmitting one or more messages from the first device and examining a corresponding response received by the first device over the communication link; and

configuring at least one of the first and additional devices in accordance with the determined link type;

wherein the first device comprises a gateway coupled between the local network and the one or more additional networks; and

wherein the step of automatically determining a link type is implemented at least in part within the gateway.

2. The method of claim 1 wherein the first device comprises customer premises equipment.

3. The method of claim 1 wherein the first device comprises a network server.

4. The method of claim 1 wherein the determined link type is one of a plurality of link variants associated with the communications network.

5. The method of claim 2 wherein the customer premises equipment is coupled to the communication network via a digital subscriber line.

6. The method of claim 2 wherein the customer premises equipment comprises an ADSL (asymmetric digital subscriber line) termination unit-receive (ATU-R) device.

7. The method of claim 1 wherein the communication network comprises an Internet protocol (IP) network.

8. The method of claim 1 wherein the determined link type comprises one of a plurality of link variants at least a subset of which correspond to encapsulation of different types of protocols in Asynchronous Transfer Mode (ATM) cells.

9. The method of claim 1 wherein the communication link comprises an ATM virtual circuit (VC).

10. The method of claim 1 wherein the determined link type comprises one of a plurality of link variants including one or more of a logical link control (LLC), a point-to-point protocol (PPP), an LLC-PPP, an Internet protocol (IP), an LLC-IP protocol, an Ethernet protocol, and an LLC-Ethernet protocol.

11. A method for use in configuring a device coupled to a communications network, the method comprising the steps of:

automatically determining a link type associated with a communication link between a first device and at least one additional device coupled to the communications network by transmitting one or more messages from the first device and examining a corresponding response received by the first device over the communication link; and

configuring at least one of the first and additional devices in accordance with the determined link type;

wherein the determining step includes first testing to determine if the link is an LLC-type link, performing at least one additional test of a first type if the link is not an LLC-type link, and performing at least one additional test of a second type if the link is an LLC-type link.

12. The method of claim 11 wherein the at least one additional test of the first type includes a test to determine if the link is a PPP link.

13. The method of claim 11 wherein the at least one additional test of the second type includes a test to determine a particular type of encapsulation for the LLC-type link.

14. An apparatus for use in configuring a first device coupled to a communications network, the communications network comprising a local network and one or more additional networks coupled to the local network, the apparatus comprising:

a processing element operative to automatically determine a link type associated with a communication link between the first device and at least one additional device coupled to the communications network, the communication link being external to the local network and comprising a communication link of the one or more additional networks, by transmitting one or more messages from the first device and examining a corresponding response received by the first device over the communication link; and to direct the configuration of at least one of the first and additional devices in accordance with the determined link type;

wherein the first device comprises a gateway coupled between the local network and the one or more additional networks; and

wherein the processing element operative to automatically determine a link type is implemented at least in part within the gateway.

15. The apparatus of claim 14 wherein the first device comprises customer premises equipment.

16. The apparatus of claim 14 wherein the first device comprises a network server.

17. The apparatus of claim 14 wherein the determined link type is one of a plurality of link variants associated with the communications network.

18. The apparatus of claim 15 wherein the customer premises equipment is coupled to the communication network via a digital subscriber line.

19. The apparatus of claim 15 wherein the customer premises equipment comprises an ADSL (asymmetric digital subscriber line) termination unit-receive (ATU-R) device.

20. The apparatus of claim 14 wherein the communication network comprises an Internet protocol (IP) network.

21. The apparatus of claim 14 wherein the determined link type comprises one of a plurality of link variants at least a subset of which correspond to encapsulation of different types of protocols in Asynchronous Transfer Mode (ATM) cells.

22. The apparatus of claim 14 wherein the communication link comprises an ATM virtual circuit (VC).

23. The apparatus of claim 14 wherein the determined link type comprises one of a plurality of link variants including one or more of a logical link control (LLC), a point-to-point protocol (PPP), an LLC-PPP, an Internet protocol (IP), an LLC-IP protocol, an Ethernet protocol, and an LLC-Ethernet protocol.

24. An apparatus for use in configuring a first device coupled to a communications network, the apparatus comprising:

a processing element operative to automatically determine a link type associated with a communication link between the first device and at least one additional device coupled to the

communications network, by transmitting one or more messages from the first device and examining a corresponding response received by the first device over the communication link; and to direct the configuration of at least one of the first and additional devices in accordance with the determined link type;

wherein the processing element is operative to perform a test to determine if the link is an LLC-type link, to perform at least one additional test of a first type if the link is not an LLC-type link, and to perform at least one additional test of a second type if the link is an LLC-type link.

25. The apparatus of claim 24 wherein the at least one additional test of the first type includes a test to determine if the link is a PPP link.

26. The apparatus of claim 24 wherein the at least one additional test of the second type includes a test to determine a particular type of encapsulation for the LLC-type link.

27. A machine-readable medium storing one or more programs for use in configuring a device coupled to a communications network, the communications network comprising a local network and one or more additional networks coupled to the local network, wherein the one or more programs when executed by a processor implement the steps of:

automatically determining a link type associated with a communication link between a first device coupled to the communications network and at least one additional device coupled to the communications network, the communication link being external to the local network and comprising a communication link of the one or more additional networks, by transmitting one or

more messages from the first device and examining a corresponding response received by the first device over the communication link; and

configuring at least one of the first and additional devices in accordance with the determined link type;

wherein the first device comprises a gateway coupled between the local network and the one or more additional networks; and

wherein the step of automatically determining a link type is implemented at least in part within the gateway.